Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of Amendment of Parts 1, 21, 73, 74 and 101 of the Commission's Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and Other Advanced Services in the 2150-2162 and 2500-2690 MHz Bands Transforming the 2.5 GHz Band	WT Docket No. 18-120

COMMENTS

EDUCATORS AND BROADBAND PROVIDERS FOR AMERICAN RURAL COMMUNITIES

Educators and Broadband Providers for American Rural Communities ("EBPARC") is a new organization, which is informal at this point. The organization was formed to represent schools and colleges that seek to apply for and receive Educational Broadband Service ("EBS") spectrum licenses from the FCC and also smaller commercial operators that have not been able to acquire adequate rights to dedicated licensed wireless spectrum to support fixed wireless networks to serve their communities. The members of EBPARC are predominately located in rural communities in areas where the educational entities have been prevented for applying for EBS spectrum licenses for decades by the FCC's 1995 decision to freeze the acceptance of new applications.

While 50 members have joined the organization to date, we believe the group also speaks for hundreds or thousands of schools that would apply for licenses if the FCC makes the decision to open a window for new educational applicants. In addition to the EBPARC members, so far,

representatives of an additional 20+ K-12 schools, colleges and universities have attended webinars or otherwise indicated an interest in applying for EBS licenses over the past four months. We have also heard from managers and owners of more than 40 additional rural internet service providers – most currently providing service to rural residents using unlicensed spectrum to serve their customers – who would like to partner with educators to deliver fixed wireless service to their communities. The fast-growing membership of EBPARC is shown on Attachment 1. This interest is all in response to the FCC's NPRM which is still a theoretical and esoteric process to most teachers and school administrators. We are confident that the actual interest in broadband is much greater than this initial showing, and that if the FCC moves forward to make EBS licenses available again to local schools and colleges in rural America, hundreds or thousands of schools and colleges will apply for licenses.

EBPARC was formed with the guidance of Select Spectrum LLC, a company that advises existing and aspiring spectrum rights holders on how to maximize the use and value of their licenses. Select Spectrum believes the FCC was wise when it established secondary market rules to provide for better utilization of the nation's spectrum assets. The EBS band has been a prime example of the success of the secondary market for spectrum.

I. Existing EBS and FCC Rules Have Created Broad and Effective Fixed and Mobile Use of EBS Spectrum in Rural and Other Portions of the Country.

EBS licenses are leased and used by Sprint to serve its 32.12 million users nationwide, but more importantly, EBS licenses have been the basis for construction of networks by both educators and smaller commercial wireless operators in rural areas. These predominately fixed wireless networks have served to provide the means for students and faculty members to bridge the homework gap and the digital divide that plagues much of rural America. EBS licenses provide access that is superior to satellite-based services in terms of throughput, latency,

reliability and cost. EBS licenses also provide superior service to unlicensed fixed wireless in areas where rf interference distance, topography, trees or other foliage makes the use of unlicensed wireless difficult – in other words almost everywhere in the U.S. The service has worked well in virtually all the areas where licenses have been granted. After 23 years, the main objective of the FCC should be to open a window to let local schools, colleges and universities apply for licenses in areas where there are vacant EBS channels. If the FCC proceeds with opening a window for new educational applicants, it is likely to receive applications from hundreds or perhaps thousands of schools and institutes of higher learning across much of rural America. Once the licenses are granted, the country will see a groundswell of new network construction and jobs. The ultimate result will be a fast and effective expansion of rural broadband construction and hundreds or thousands of new bridges for the rural homework gaps that plague rural America; all of which can be accomplished for the simple administrative cost of accepting, issuing, and administering licenses – which will likely be less than $1 million. There are an estimated 39 million people living in areas where new licenses can be issued. Of the 1,232 counties that we expect to be eligible for new licenses, an astounding 1,077 counties, home to over 19 million people, are considered to be rural by the FCC. A conservative estimate (based on the many networks already constructed by educators and small wireless providers in rural areas that were licensed before 1995) is that at least 50% of the population of these rural areas – 9.5 million – would be covered by such new networks. This equates to a one-time federal cost of less than eleven cents ($0.11) per person within the coverage area of networks build in utilizing new licenses! The rest of the cost would be borne by local schools and colleges that are eager to connect their communities to the internet, or by small commercial operator that are willing to

invest in their communities. How else can the government do so much to expand rural broadband and bridge the digital divide and homework gap for so little?

II. A Priority Filing Window Should be Opened for New EBS Licenses Issuance

Opening such a window would allow new educational entities that have never had the opportunity to benefit from holding and using 2.5 GHz spectrum (and that have a local presence in an area) the opportunity to access this spectrum for the first time. This is the priority request of the EBPARC members. The issuance of new EBS licenses will allow for either direct construction by Educational Institutions and/or leasing of excess capacity to commercial operators who could handle network construction. The availability of these licenses will support rapid development by schools and local operators of fast and reliable internet services within rural communities, improve the educational experience of our students, support much-needed economic development in rural communities, and in some cases will also generate royalty income to schools.

Since the FCC issued its freeze on processing of new Educational Broadband Spectrum licenses in 1995 and failed to re-open the EBS service for licensing when it changed 2.5 GHz rules in 2005, progress in the development of wireless internet coverage in rural America has been slowed. Thankfully the current FCC has the timely opportunity to address the issue now. Technology has improved, costs have declined, demand has increased, and the need for students to have access to the internet for educational purposes has gone from optional to mandatory. Vast areas – more than half of the land area of the U.S. – are not covered by EBS licenses. Now is truly an excellent time for the FCC to make licenses available for application by schools and colleges on an expedited schedule.

III. The FCC Should Implement A First-Come-First-Served Application Window

As described herein, and undoubtedly by many of the schools and school-oriented organizations that will file comments in this proceeding, tribes, local schools and colleges are the best parties to acquire new EBS licenses. Demand for the licenses is likely to be high, and in the case of mutually exclusive licenses, the Commission has no good options on what to do and any such processes would slow the issuance of new licenses. As a result, the commission should simply issue licenses within the window to the first qualified entity that applies. EBPARC members believe that the definition of qualified for this purpose should be accredited schools, colleges and universities that have a local presence in the license area and have not previously held EBS licenses. Once, after the opening of the window, such an entity applies for a license, the window for that particular license should be closed. We call this the first-come-first-served solution.

The first-come-first-served process we propose should not allow for mutually exclusive applications to be received. If through some unlikely process the computer system recognizes more than one application from qualified applicants for the exact same license at the exact same time (to its most precise level of timekeeping) then the commission may use any fair way to resolve, and we recommend a process that is expedient. One method could be a 30-day negotiation period between the parties and if they do not achieve resolution, the commission could decide by coin flip or some other method that involves chance rather than any extended process. Cumulatively, this is a very important process that can achieve big results for education, closing the digital divide and extending broadband to rural communities including those served by EBPARC members, but each individual license will have only moderate value, and does not justify complex and time-consuming hearings or other expensive dispute resolution procedures.

Resorting to competitive bidding for any given license will generally make it highly unlikely that the license will be granted to an educational institution and significantly extend the time before that license is available to provide educational and broadband access to the currently-vacant area.

IV. No Change to Established Lease Term Rules is Necessary

The FCC should not change the established rules in relation to Educational Broadband Spectrum lease terms. A lease term of thirty-years is adequate for a wireless operator to purchase and install equipment and earn an adequate return, and educational licensees are free to bargain for a shorter term.

In an environment where technology is changing quickly, longer lease terms would put the educational license holders in a position where they could not reasonably predict the future use of the spectrum or even of their own educational institution's future needs for the delivery of educational programs and services. Allowing operators to lease with an "infinite" term would put benefits of EBS spectrum to the educational institution at risk. Following a 30-year term, a school should have the opportunity to change the arrangement with its leasing partner, develop its own network, or partner with a new operator if the current lease tenant is not providing the greatest benefit to the institution, while furthering the development of the wireless infrastructure in the community.

V. The FCC Should Issue New EBS Licenses at the County Size

It is sensible to issue Educational Broadband Licenses at the county level for several reasons. Many schools and colleges are organized with county service areas. Counties are a good fit for the typical coverage area of a multi-base station wireless network. The propagation of a typical 2.5 GHz fixed wireless network can cover a county at moderate expense without creating significant interference issues in adjacent counties. Census tracts are generally too small

geographically, so the coverage area from even a single 2.5 GHz fixed wireless transmitter would naturally overlap the edges of the GSA, creating inefficiencies and interference issues in adjacent census tracts. The economics of serving a census tract makes more sense at CBRS frequencies which propagate less and are subject to lower power limits. The size of and population of census tracts would require schools to obtain multiple licenses or operators to arrange multiple leases in neighboring census tracts to operate efficiently. Simply put, if the service cannot be operated efficiently, the result will be no networks getting constructed.

Larger license areas, composed of multiple counties, have been the history of most EBS licenses, but the Commission should not consider issuing new multi-county licenses because most school districts, and many community colleges, are set up to serve only one county. Also, the moderate propagation of 2.5 GHz services fits well with county sizes. The FCC's ULS database has clear county definitions, so this is consistent with the Commission's current primary licensing regime. Licenses of county size also complement the current and planned size of many of the small fixed wireless operators that are members of EBPARC. These smaller operators are examples of the companies that have built networks and/or will build fixed wireless networks to serve rural customers. By setting counties as the new license size standard, the FCC can grant thousands of new licenses that will generate a building boom for rural fixed wireless networks. County size represents the "Goldilocks" of GSA size for new EBS licenses – not too big and not too small.

VI. Qualified Applicants Should Have Opportunity to Apply for Two Channel Groups

EBPARC believes that many schools and institutes of higher learning should have the opportunity to apply for spectrum. In Window #3, each qualified applicant should have the opportunity to apply for up to two channel groups (e.g. A1234 and B1234 or D1234 and G1234).

In each case, to avoid the possibility of mutually exclusive applications, we believe that the window for the applied-for channel groups should be closed as soon as an application is received from a qualified party. This would allow at least three qualified applicants to receive licenses in areas where all five EBS channel groups are not licensed when the application window opens. EBS licensees, both old and new, would then have the opportunity to cooperate with one another or with commercial operators in the construction and operation of a wireless system.

EBPARC believes the overall EBS filing window should only be open for a moderate length of time – our recommendation is 60 days, we also suggest that after half of the application period for a given area has passed, if there are still vacant groups to be applied for, a party that has successfully applied for two existing channel groups be allowed to apply for any remaining channels or groups in its local area.

VII. Reasonable Expansion of Existing GSA's is in the Public Interest

Existing licenses should be expanded to fill small gaps between licenses as far as county lines. This will allow existing school and commercial networks to fill in gaps in their coverage and reduce any possible impact of RF interference from a new wireless network operator in an area shoehorned in between existing licenses. Expansion into counties that are untouched or just marginally covered by existing licenses is generally not desirable, since counties that are not currently licensed, or just covered by a small portion of an existing license centered elsewhere, should be available for application by a school or college that has not previously held a license. The FCC has access to data that should allow a reasoned decision on this matter. EBPARC suggests a good threshold to be 20% - if less than 20% of the geographic area of a county is covered by existing licenses, then the 80% plus geographic area of the county should be available for new applications; likewise, if more than 20% of a county is already covered, then

existing licenses should be allowed to expand to county boundaries. A reasonable exception is large counties exceeding 1000 square miles of land area where licenses are currently unissued, as this equates to a square of approximately 31.6 miles. This is a reasonable size for a school or college district in a rural area and also a reasonable size for a fixed wireless network comprising multiple towers. In such areas, new applications should be allowed in the third window (after expansion and Indian applications) for schools and colleges that do not have an existing license.

VIII. New EBS Licenses Should be Issued to Entities Who Support Education

The FCC should retain established rules which allow accredited educational institutions to obtain an Educational Broadband Spectrum license. The goal is to issue licenses to entities who support and contribute to the preservation of the educational nature of the spectrum, and to those who provide educational benefits by using the spectrum. The FCC's educational priority window should be open to K-12 schools and colleges and universities that have not previously held spectrum licenses.

IX. Existing Educational Use Requirements Should be Maintained

Educational use of the licenses is significant and growing. The main impediment to educational use has been the Commission's freeze since 1995 on the issuance of licenses in more than half of the geography of the country. In the interim, the demand for internet access for educational and other uses has risen by orders of magnitude, and the performance of fixed and mobile wireless networks has improved exponentially, while the cost per bit delivered has dropped to levels that even some school districts, institutes of higher learning and small wireless operators can afford. The educational use requirement for existing licenses should be maintained, and the Commission may want to establish a separate process to review whether the means of measuring educational use is adequate, but any debate over how to measure educational use should not further extend the

FCC's refusal to accept license applications from schools and institutes of higher learning that have been prevented from applying due to the FCC's freeze.

X. Localism of EBS License Holders is Instrumental to the Growth of Wireless Coverage in Rural America

A license holder's local presence is essential to the development of local networks and benefits to the local community for EBS services. Local license holders will make sensible choices that will benefit the area in which they reside and will bring more benefit to their community than a license holder who is not local, and therefore have less understanding for the specific needs of the community. Schools and colleges that will potentially be issued new 2.5 GHz EBS licenses should physically reside within the potential licenses geographic service area because their students, students' families, staff and faculty will be most impacted by the development of the wireless infrastructure in their community. Preserving localism will be instrumental in achieving the FCC's goal of providing much needed wireless internet access in rural areas of the country, where internet access choices are very limited or there are no existing networks.

In relation to proving the localism of the potential license holder, a physical mailing address (Not P.O BOX) should be sufficient in proving their local presence. P.O Box addresses are not sufficient because it is an easy way to "fool the system" which will result in licenses being issued to ineligible parties.

XI. Tribal Nations are a Good Choice to be Educational Broadband Spectrum License Holders

We support the establishment of a local priority filing window for rural Tribal Nations. Currently only a small handful of Tribal Nations currently possess EBS spectrum rights. There are no other presently available or planned future grants of Broadband spectrum opportunities for rural Tribal Nations. Thus, the EBS band is a unique, and likely one time, opportunity for Tribal

Nations to obtain much needed spectrum for the development of suitable networks, either on a proprietary basis or via partnership with local wireless operators. Tribal Nations may be one of the few, or only, potential applicants for EBS licensed spectrum in their respective geographies. Should such a local priority filing window not be afforded, the spectrum will likely be auctioned or held by the FCC for future issuance. Either outcome could result in the spectrum lying fallow for many years to come. Local ownership and control of EBS spectrum rights for Tribal Nations are the ideal outcomes for all relevant stakeholders.

XII. Issuing New EBS Licenses by Region will Prevent the FCC from being Overburdened, and Should Notify Potential Applicants 90 Days Prior to Filing Window Opening

Rules should be adopted similar to what the proposed rulemaking suggests. Considering the technical limitations of the Universal Licensing System, "ULS", dividing available licenses by region would be the most efficient licensing technique. This will prevent the FCC from being overburdened by applications.

The FCC should publicly announce the opening 90 days prior to the opening of the respective filing window. Given that applicants are constituents of educational institutions, time is needed to prepare applications and garner approval from participating members of the respective entity. Acquiring Board approval, for example, may require more than 15 steps[1], proving why 90 days should be the minimum amount of time the FCC should consider when providing notification to of the opening of an application window.

[1] https://ichampss.sph.uth.tmc.edu/wp-content/uploads/2014/10/APPROVE-FT-School-Board-Approval-Process-FINAL.pdf

XIII. Educational Reservation of EBS Spectrum Should Remain Unchanged

The existing FCC rules which state the required reservation of 5% of the channels capacity for educational use has been working well for educational institutions for many years. Commercial operators fulfill this requirement by offering the respective educational entity service credits, which can be used towards wireless services that benefit their students and/or faculty. The Service credits, in conjunction with monthly lease royalties, as well as the development of the wireless infrastructure within the immediate community, provides schools and colleges advantageous assistance in achieving their educational mission.

For example, a rural internet service provider in Louisiana provides four free connections, equating to $200 monthly, and also provides free wireless internet to a local college radio station, making it possible for the school to broadcast their educational message, in addition to the monthly royalties the operator pays to the school to lease their Educational Broadband Spectrum.

The development of the wireless internet infrastructure in the immediate community produces great benefit for education as it provides sufficient internet coverage to allow individuals to complete assignments or continue their educational quest, when at home. As of 2015, only 73% of American households had access to a broadband internet connection[2]. That means over 20 million households in the country still do not have access to sufficient internet coverage. Also, in 2015, only 61% of children between the ages 3 to 18 had internet access in their home [3]. In today's age, it is evident that internet access is instrumental to education and the progression of today's youth. Issuance of new 2.5 GHz EBS licenses will ultimately assist in bridging the digital divide.

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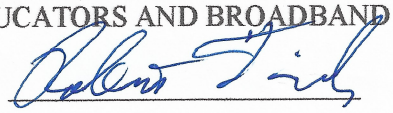
[2] http://www.pewresearch.org/fact-tank/2014/09/19/census-computer-ownership-internet-connection-varies-widely-across-u-s/

[3] https://nces.ed.gov/fastfacts/display.asp?id=46

Most rural commercial operators rely heavily on long-term return on investment. It is very costly to deploy a network from the ground up, not to mention the branding and marketing necessary to be recognized by potential customers. Reserving 20% of the licenses capacity for educational use is simply too much for an operator to afford in conjunction with paying monthly lease royalties. Rural wireless service providers will be faced with a challenge in succeeding with such a requirement in place and potentially would not have the financial means to advance the wireless network to the extent it should be developed. Ultimately, this will likely result in rural America continuing with no solution to much needed wireless internet coverage.

Respectfully submitted,

EDUCATORS AND BROADBAND PROVIDERS FOR AMERICAN RURAL COMMUNITIES

By: 

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Attachment 1

Members of Educators and Broadband Providers for American Rural Communities ("EBPARC")

Lawrence County School System	Hackett School District
Amelia Academy	Pampa Independent School District
Clarksville Public School District	Chireno Independent School District
East Lycoming School District	Liberty Community Unit School District
Odin Public Schools	Cloud 9 Wireless
Wisper ISP	Crystal Automation Systems
Ziplink Internet	Ptera Inc.
Gazette Record Internet	Ndemand Inc.
Gtek Communications	Zirkel Wireless
Phone Doctor	Total Highspeed Internet Solutions
Veo Point	Highlands Wireless
RF Design Services LLC	KGI Communications
Wired or Wireless Inc.	Royell Communications
Bitwise Inc.	Hilltop Broadband
Allion USA	Sync Wave
StraightUPNet LLC.	King George County
Redwire	Metro Service Center
Gifford Wireless	Cogo Technologies
A Better Wireless	LiveWire
ClearNetworx	Air Grids
Minoan Mobile LLC	La Harpe Telephone

Paladin Wireless	Harlan 2 Way
City Net	Tenn Wireless
La Harpe Communications	New Source Broadband
American Wireless	Select Spectrum